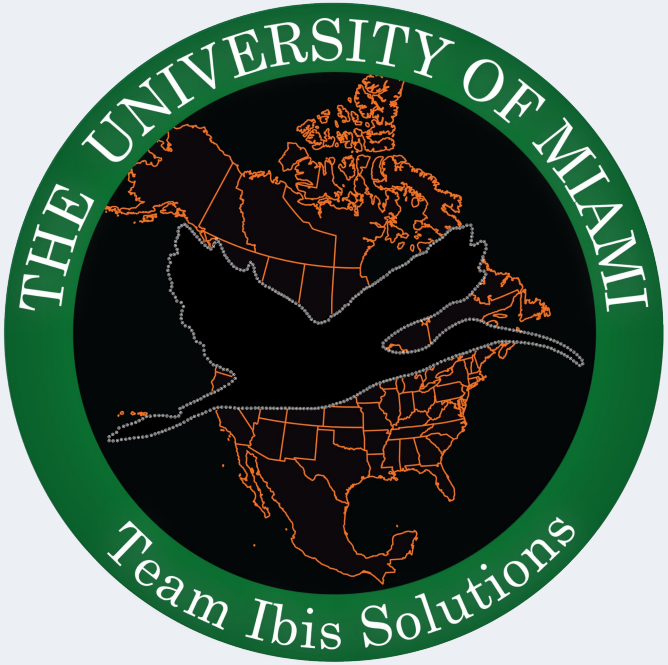

ATMIS: Air Traffic Management Integrated System

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The Status Quo

Inefficient design systems disrupt seamless air traffic management workflows.

- Current system requires **multiple clicks** and maneuvers to complete tasks
- Transition challenges from over **57 separate** legacy applications
- Lack of **customization options** and user preferences
- **Inconsistency** in graphical user interface (GUI) across applications
- Heavy **cognitive load** due to learning different behaviors and interactions

What We Heard

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“I would just dial in and passively listen during the planning webinar.”	Not all managers are active in the experience during the 2 hour webinars.
“I would have to physically print out multiple TMI models on paper in order to talk with my colleagues to find the best model.”	TM’S would make multiple entries in one application.

The Insight

What we didn't know:

The workflow is a **cyclical process**

Collaborative but not everyone is included

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Users would be **overloaded with information**, leading to difficulty remembering important information and **possible errors**

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Why is it important?

This could impact the **overall efficiency** and **safety of flight redirection** processes and require additional efforts to mitigate information overload

Meet our Users...

Meet Edward

Users

A seasoned traffic manager who has developed a routine of how to complete his workflow for over a decade.

- He has a set of tasks that he follows everyday, never derailing from routine.

- While viewing the current flight demand, he becomes frustrated with having to click open multiple windows to change and use an application.

- His frustrations reduce his productivity, making it difficult to focus on his main task and monitor input from other control centers.

Edward Jones

Meet Robin

Users

Robin Sanchez

A young and tech savvy new hire that has not developed preferences in order of operations and ways to work with current tools in place.

“I want to familiarize myself with the layout and functions of the various software and tools provided to me when I log into my computer at the start of my shift.”

“These systems lack a user-friendly interface which can be overwhelming and confusing.”

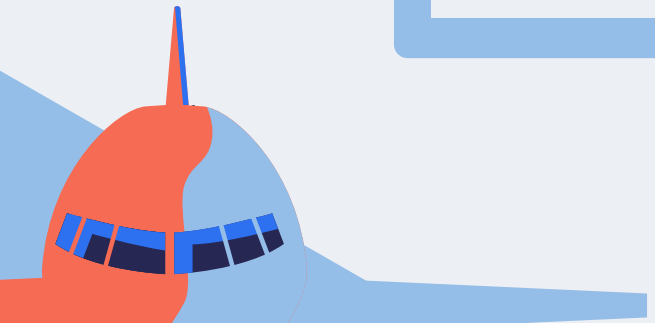
The Opportunity

What If There Was A Way To:

- Streamline the air traffic management process
- Enhance communication and collaboration between stakeholders
- Provide comprehensive and up-to-date information about weather conditions, airspace congestion, and potential conflicts
- Send notifications and alerts for critical flight information

All In One Place?

We’re revolutionizing air traffic management as Adobe and Microsoft revolutionized communication and integrated user experiences.



Introducing ATMIS

Air Traffic Management Integrated System

A modernized interface for traffic managers, offering a flexible and customizable layout focusing on the task at hand. Delivering the most relevant information at the right time to maximize productivity and minimize user error.

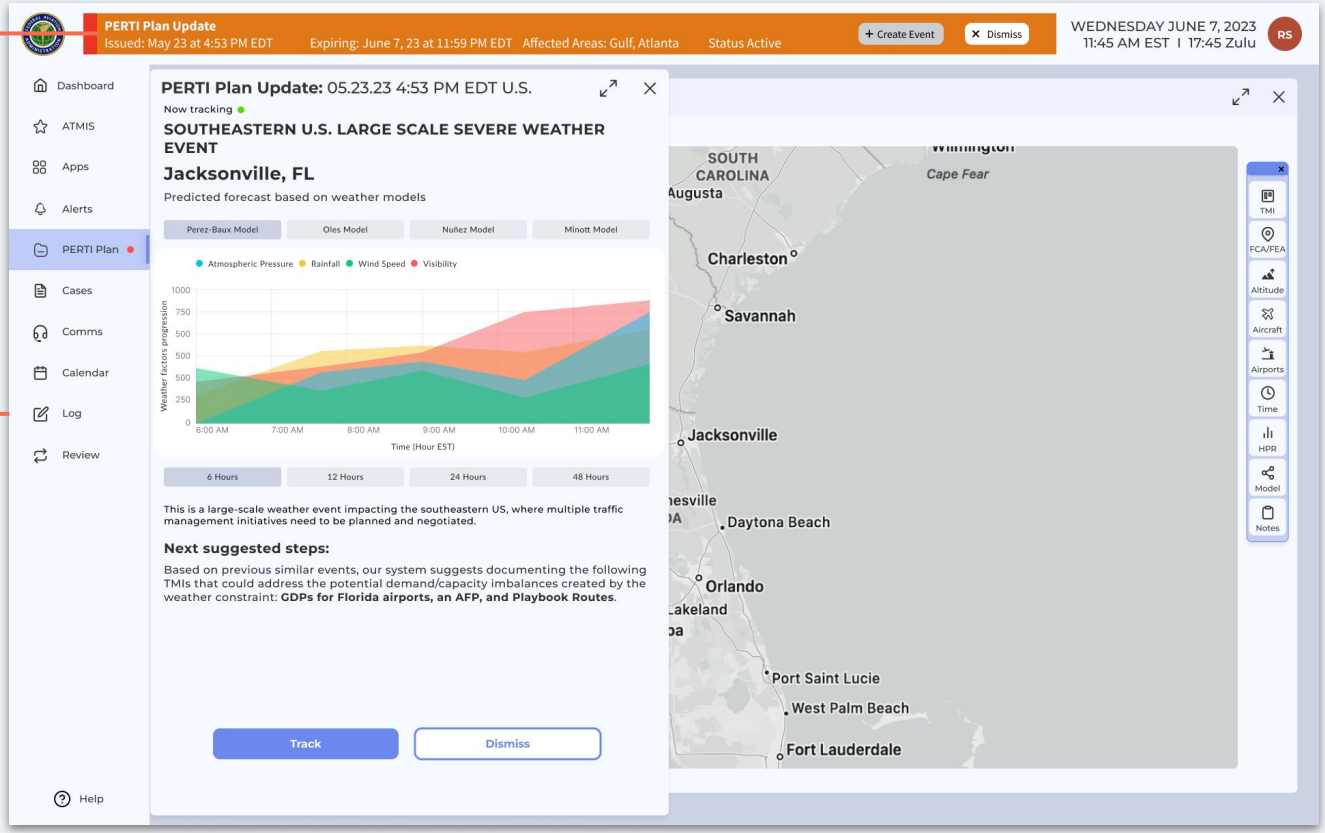
Executive Summary

- Modernized interface for traffic managers at the Command Center
- Flexible and customizable layout for efficient workflow
- Minimized clicks and maneuvers, spotlight relevant information
- Streamlined application to consolidate and simplify workflow
- Consistent look and feel for ease of use

ATMIS Core Layout Properties

Notifications

App Launcher



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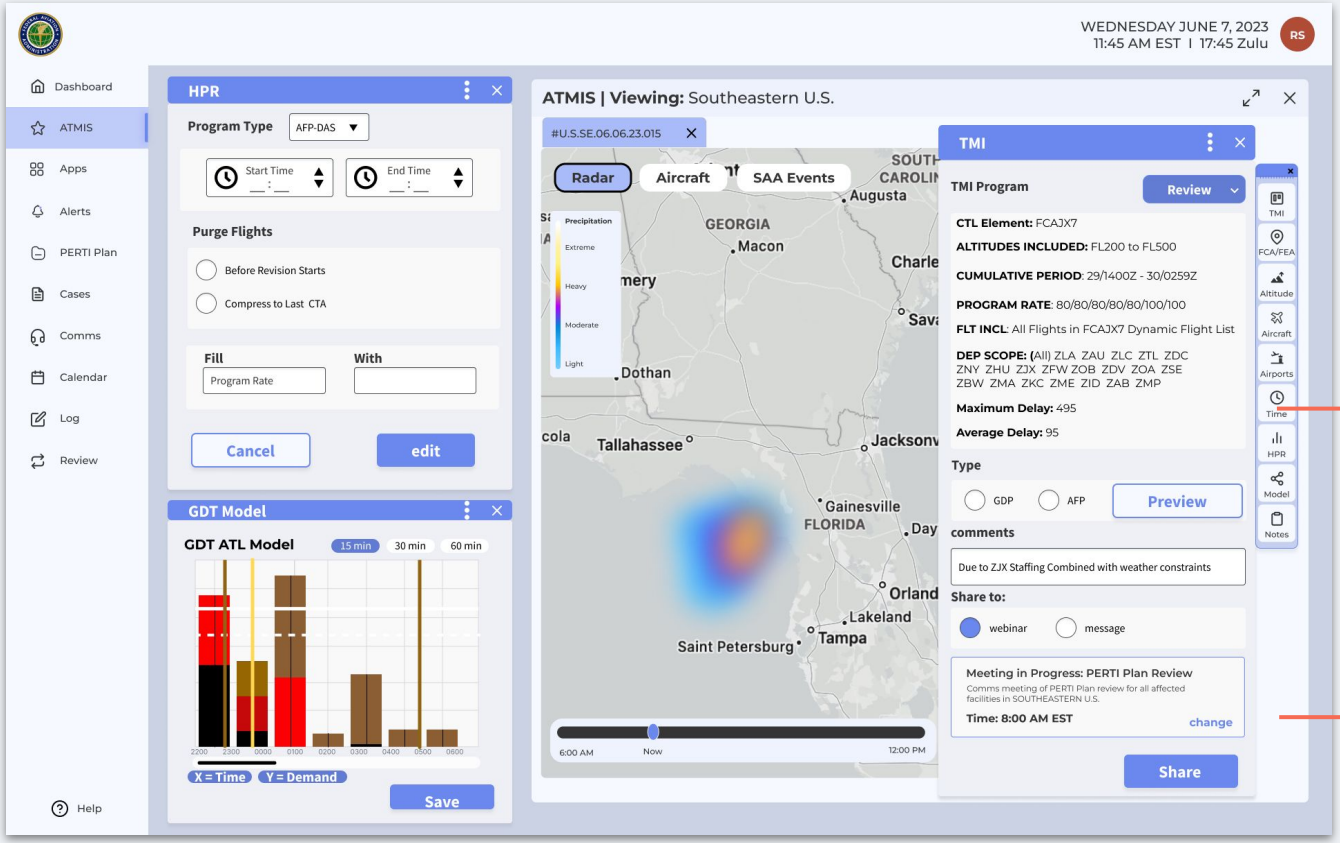

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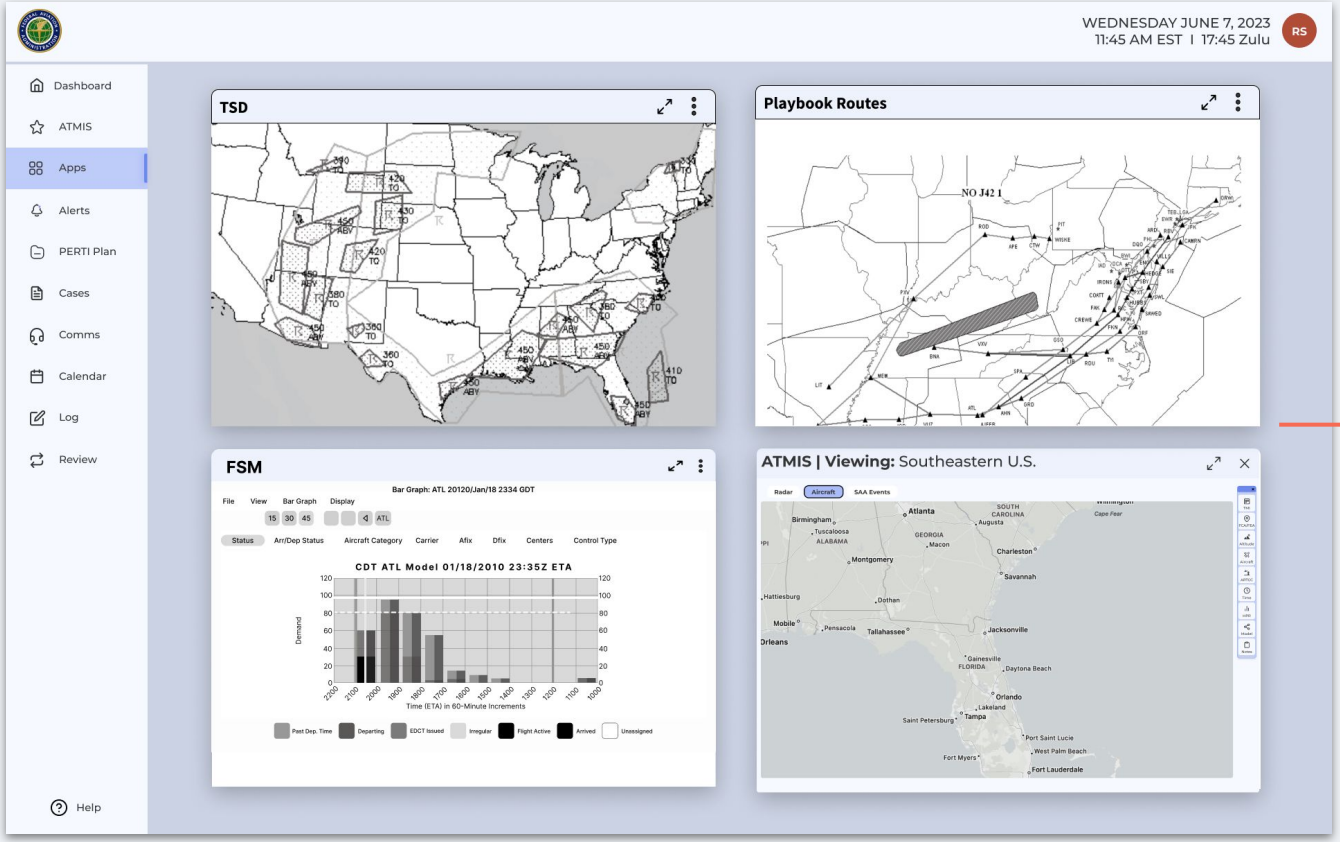
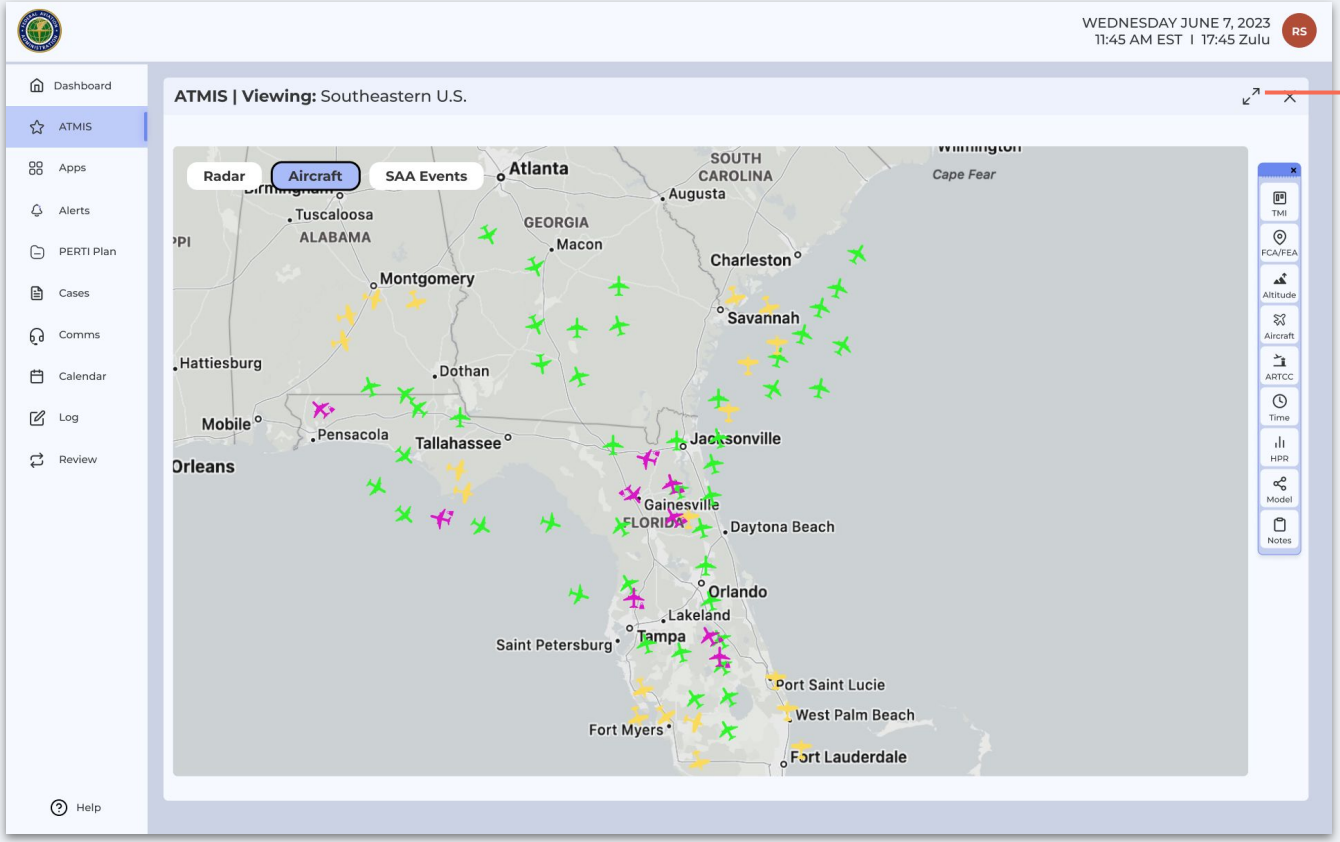


Focus Area With Live Apps

ATMIS Core Layout Properties

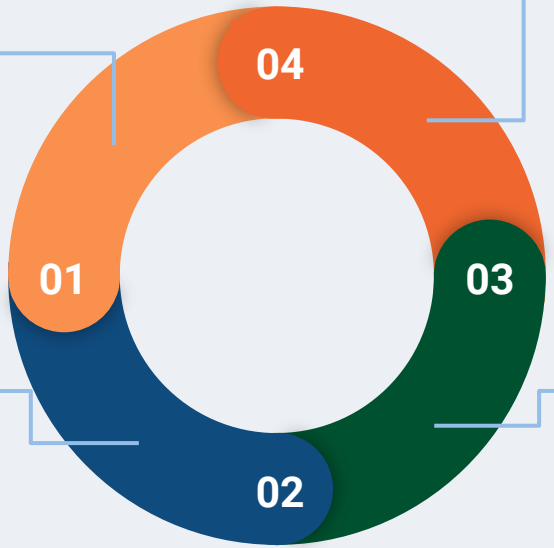


Expanded & Focused View

The Advantages

Data Integration

ATMIS consolidates information from multiple systems, reducing manual data entry and improving accuracy.



Real Time Updates

ATMIS provides real-time updates, allowing command centers to receive and disseminate crucial information rapidly.

Optimized Workflow

The streamlined app design enables faster and more efficient communication.

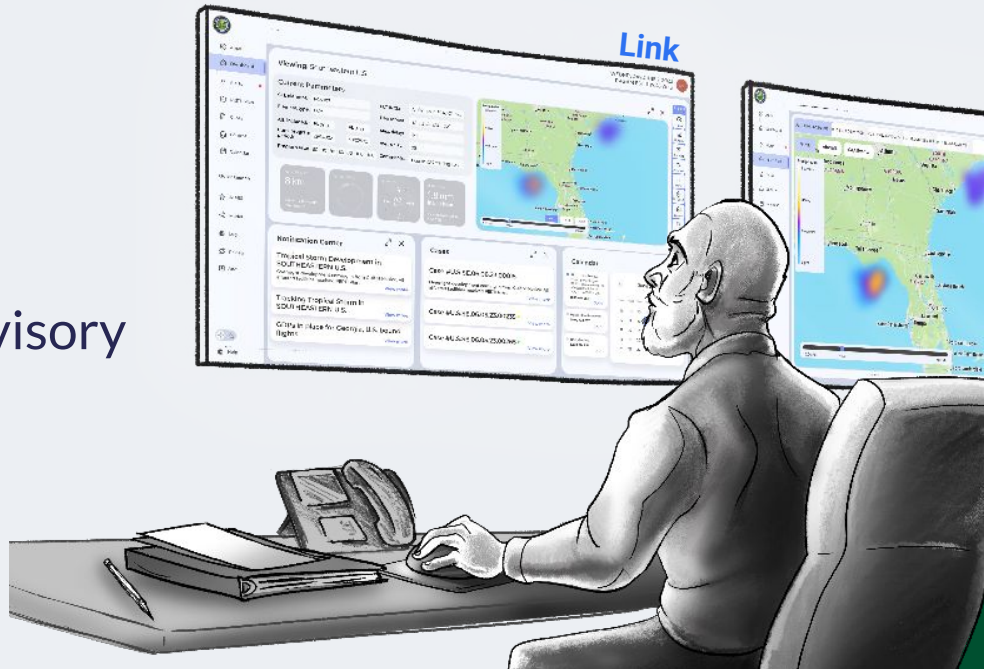
User-friendly Interface

The streamlined design makes it intuitive for command center personnel to navigate and communicate effectively.

ATMIS Prototype Tasks

Traffic Flow Management for a Large-Scale Weather Event with FMDS

- Create FCA
- View Flight Demand
- Model an AFP
- Share FCA and modeled AFP
- Implement AFP by issuing an Advisory
- Monitor Effectiveness of AFP
- Modify the AFP parameters
- Log TFM actions



Summary

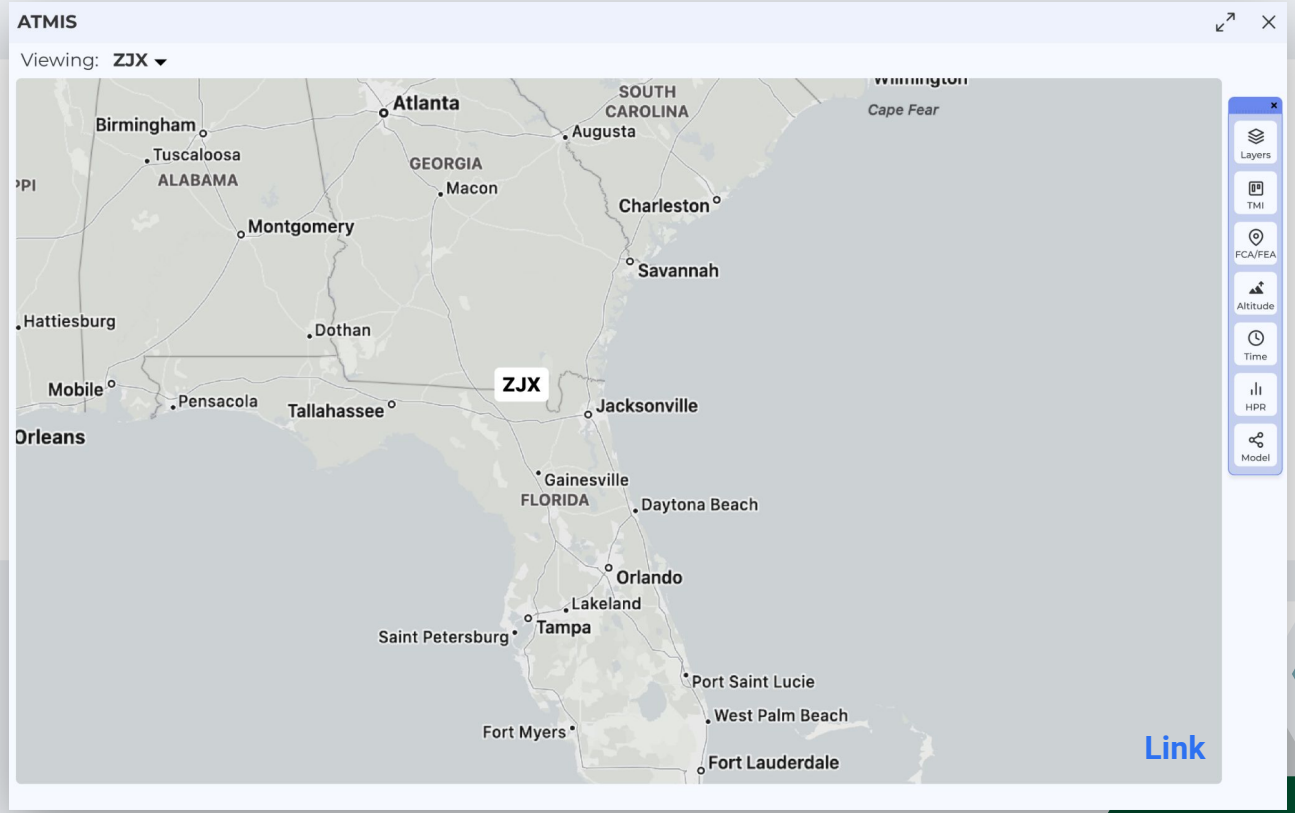
ATMIS is the standard to improve the workflow for all air traffic control managers.

With ATMIS, air traffic control managers can…

1. Focus effectively on tasks with minimized clicks
2. Customize the layout and set preferences specific to them
3. Experience optimized multitasking on a focused workspace
4. Communicate with enhanced features and tools

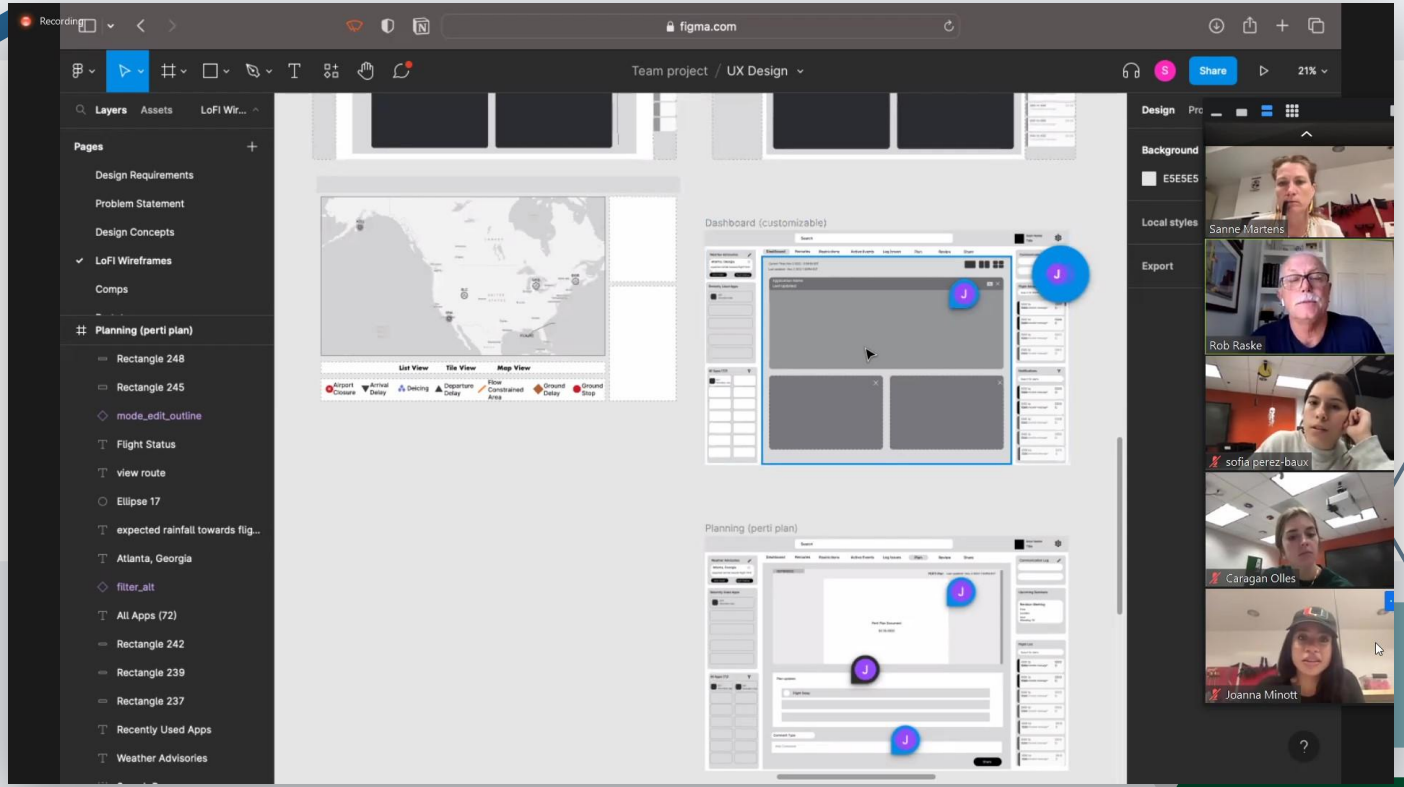
Next Steps

Design Improvements for Better Integration



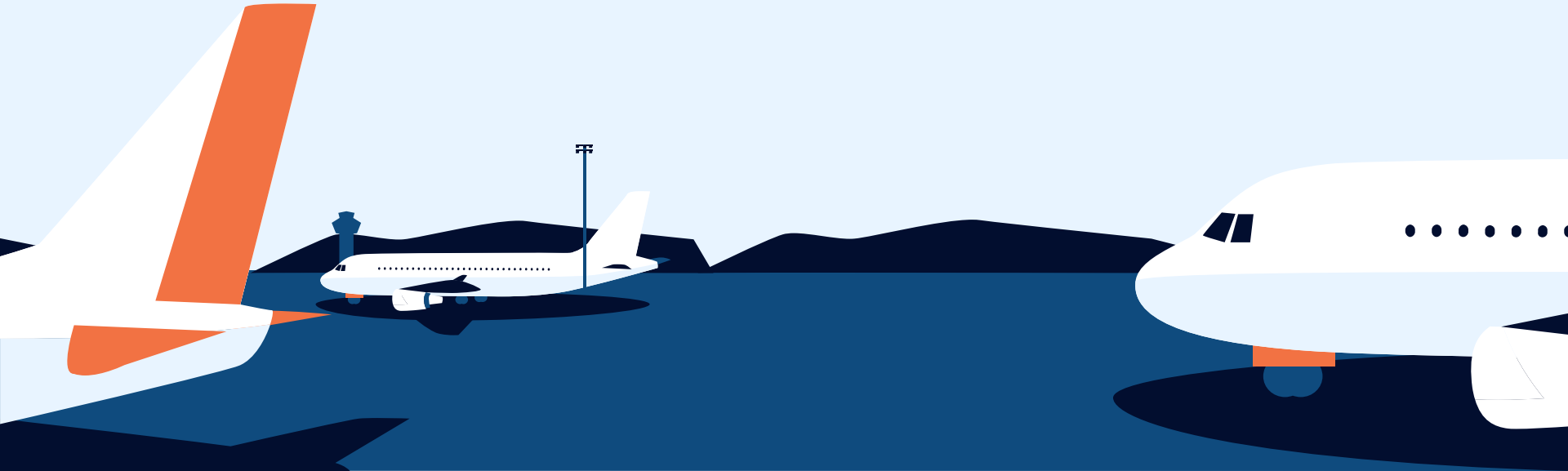
Next Steps

User Testing



Next Steps

Virtual & Augmented Reality Opportunities

- Dynamic interactions with data
- Spatial relationships can be more accurately measured and interpreted
- Collaborative training opportunities
- Engaging and realistic communication

Thank You!